REMARKS

Upon entry of the amendments, claims 2-25 will be pending in the above-identified application.

Applicants initially point out that a declaration under 37 C.F.R. § 1.132 is submitted herewith. Pursuant to 37 C.F.R. § 1.116, Applicants submit that good and sufficient reasons exist for not presenting the declaration earlier and, therefore, respectfully request entry of the declaration. In particular, Applicants believed that a *prima facie* case of obviousness under 35 U.S.C. § 103 had not been established and, therefore, that Applicants were under no obligation to present evidence of non-obviousness. While Applicants maintain that *prima facie* obviousness has not been established, in order to expedite prosecution and in response to suggestion of the Examiner, the declaration is submitted herewith and further demonstrates the non-obviousness of the subject matter of the current claims.

Rejections Under 35 U.S.C. §103

Claims 2-5, 8-19 and 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Martz (U.S. Patent No. 4,793,803) (hereinafter referred to as "Martz et al.").

Applicants respectfully submit that the cited reference fails to establish a case of *prima facie* obviousness because the cited reference does not teach or suggest each and every element of the claimed invention. MPEP § 2143. For example, at least the features of modeling a set of upper and lower teeth in a masticatory system of a patient in three or more predetermined positions prior to a stage of treatment, the stage of treatment comprising successively applying the appliances to the patient's teeth, as provided in claim 2, are not taught or suggested in Martz, thereby precluding *prima facie* obviousness. Similarly, regarding claim 3, Martz fails to teach modeling a set of upper and lower teeth in a masticatory system of a patient using three or more predetermined molds or casts prior to a stage of treatment, the stage of treatment comprising successively applying the appliances to the patient's teeth. Regarding claim 25, Martz fails to teach modeling a set of upper and lower teeth in a masticatory system of a patient prior to a stage of treatment, the modeling comprising modeling the set of teeth in an initial position, a desired

position, and a plurality of intermediate positions, the stage of treatment comprising successively applying the appliances to the patient's teeth.

As previously been made of record, Martz, at best, teaches following up an initial treatment period (i.e., fabrication and use of an appliance) with either modifications to the existing appliance, or repetition of previously cited patient examination and appliance fabrication steps. Nothing in Martz teaches or suggests modeling more than one appliance prior to a stage of treatment. And nothing in the record, other than Applicant's own disclosure, would teach or suggest modifying Martz in order to model more than one appliance prior to a stage of treatment where multiple appliances are successively applied to the patient's teeth. Martz, in fact, teaches just the opposite of the modification proposed by the Examiner in teaching that "as time goes on, movement of the teeth may be accomplished through multiple stages of the appliance by utilizing more than one wax setup" (Martz at col. 4, lines 12-15; emphasis added). As such, Martz fails to teach or suggest each and every element of the claimed invention.

While Applicants do not agree with the instant rejection and submit that the Examiner has failed to establish *prima facie* obviousness for at least the reasons set forth above, in order to further expedite prosecution of the instant application, Applicants have attached hereto a Declaration under 37 C.F.R. § 1.132 by Dr. Robert L. Boyd. The Boyd declaration, which is further summarized herein below, provides evidence that one skilled in the art would not have found the currently claimed subject matter obvious in view of the prior art available at the time of the invention.

As set forth in the Boyd declaration, prior to the time of the invention, the practice of orthodontics was reactionary in that the approach followed by orthodontists with typical braces was to apply a force to teeth (via wire braces and brackets), and after a period of time examine the resulting movement and positions of the patient's teeth. After the examination, the orthodontist would determine what new set of forces to apply to the teeth to further move the teeth as desired by the orthodontist. Prior to examining this "resultant" position of the teeth, the orthodontist would not have specific knowledge of what forces he would want to employ to further move the teeth, or when to employ those forces. Accordingly, prior to the time of the

present invention, in keeping with the reactionary procedures of orthodontists, an orthodontist would determine the next stage of movement of a patient's teeth after examining the results of the previous stage. As such, an orthodontist would not have generated a subsequent tooth arrangement prior to generating a tooth arrangement of a preceding stage. (See, e.g., Boyd Declaration, paragraph 8).

Moreover, prior to the time of the present invention, traditional practice with respect to orthodontic treatment using patient removable dental appliances, such as polymeric shell appliances, was reactionary by generally consisting of: (i) examining the patient; (ii) fabricating an appliance using a physical model of the patient's teeth (e.g., a plaster mold) and a vacuum forming machine; (iii) prescribing that the patient wear the appliance; (iv) after a period of time, examining the resulting movement and positions of the patient's teeth; and (v) fabricating, if necessary, another appliance using a physical model of the patient's teeth. As such, it would not have been obvious for an ordinarily skilled orthodontist to fabricate a subsequent appliance before examining the resulting movement and position of the patient's teeth. And it would not have been obvious for an ordinarily skilled orthodontist to model teeth to produce a subsequent appliance before applying a previous appliance and examining the resulting movement and repositioning of the teeth at a previous stage. (See, e.g., Boyd Declaration, paragraph 9, 11, 13).

As set forth above, the Boyd declaration additionally demonstrates the non-obviousness of the subject matter of independent claims 2, 3 and 25. Dependent claims 4, 5 and 8-19 are allowable at least for depending from allowable independent claims 2 and 3.

Accordingly, for the reasons set forth above, withdrawal of the rejections of claims 2-5, 8-19 and 25 under 35 U.S.C. §103(a) is respectfully requested.

Claims 6 and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Martz et al. in view of Duret et al. (U.S. Patent No. 4,611,288).

The rejection of the claims over Martz is traversed for the reasons set forth above. In particular, at least the features of modeling a set of upper and lower teeth in a masticatory

system of a patient in three or more predetermined positions prior to a stage of treatment, the stage of treatment comprising successively applying the appliances to the patient's teeth, as provided in claim 2, are not taught or suggested in Martz, thereby precluding *prima facie* obviousness. Similarly, regarding claim 3, Martz fails to teach modeling a set of upper and lower teeth in a masticatory system of a patient using three or more predetermined molds or casts prior to a stage of treatment, the stage of treatment comprising successively applying the appliances to the patient's teeth.

Duret teaches using X-ray data to obtain dynamic occlusion data. Duret, however, fails to provide the teachings that are missing from Martz. For example, Duret does not teach modeling teeth in three or more predetermined positions prior to successively applying the appliances to the patient's teeth. Thus, even if combined, the cited reference would still fail to teach each and every element of independent claims 2 and 3, or claims 6 and 20 depending therefrom.

Furthermore, the Boyd declaration, and as further described above, additionally demonstrates the non-obviousness of the subject matter of the current claims.

Accordingly, for the reasons set forth above, withdrawal of the rejections of claims 6 and 20 under 35 U.S.C. §103(a) is respectfully requested.

Claim 7 is rejected under 35 U.S.C. §103(a) as being unpatentable over Martz et al. in view of Andreiko et al. (U.S. Patent No. 5,683,243).

The rejection of the claims over Martz is traversed for the reasons set forth above. In particular, at least the features of modeling a set of upper and lower teeth in a masticatory system of a patient in three or more predetermined positions prior to a stage of treatment, the stage of treatment comprising successively applying the appliances to the patient's teeth, as provided in claim 2, are not taught or suggested in Martz, thereby precluding *prima facie* obviousness. Similarly, regarding claim 3, Martz fails to teach modeling a set of upper and lower teeth in a masticatory system of a patient using three or more predetermined molds or casts prior to a stage of treatment, the stage of treatment comprising successively applying the

appliances to the patient's teeth. Andreiko fails to provide the teachings that are missing from Martz. Nowhere does Andreiko teach a removable appliance or modeling a set of upper and lower teeth in a masticatory system of a patient in three or more predetermined positions prior to a stage of treatment.

Furthermore, the Boyd declaration, and as further described above, additionally demonstrates the non-obviousness of the subject matter of the current claims.

Accordingly, for the reasons set forth above, withdrawal of the rejections of claims 6 and 20 under 35 U.S.C. §103(a) is respectfully requested.

Double Patenting

Claims 21-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 37-40 of U.S. Patent No. 6,450,807 in view of Martz et al.

For the reasons set forth above, Applicants respectfully traverse the rejection of the claims in view of Martz and submit that Martz does not teach or suggest the methods of the currently pending claims. In order to expedite prosecution of the present case, however, Applicant submits herewith a terminal disclaimer in compliance with 37 C.F.R. §1.321(c), thereby overcoming the double patenting rejection. Accordingly, withdrawal of the rejection of claims 21-24 under the obviousness type-double patenting is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 206-467-9600.

Respectfully submitted,

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